Response of
Wisconsin Power and Light Company
to
The Public Service Commission of Wisconsin
Data Request No. 3.03

Docket Number:	05-CE-137
Date of Request:	March 11, 2009
Information Requested By:	Ken Detmer
Date Responded:	March 30, 2009
Author:	Eric Guelker
Author's Title:	Mgr Environmental Services
Author's Telephone No.:	(608) 458-8163
Witness: (If other than Author)	

Data Request No. 3.03:

p.18 par. 3: Provide BART analysis submitted to DNR.

Response:

The Wisconsin Department of Natural Resources (WDNR) identified the following WPL electric generating units (EGUs) as being subject to the Best Available Retrofit Technology (BART) requirements under NR433.03:

- Columbia Energy Center Units 1 and 2
- Edgewater Generating Station Unit 4
- Nelson Dewey Generating Station Unit 2

These four EGUs are also subject to the EPA's federal Clean Air Interstate Rule (CAIR) regulation codified under 40 CFR Part 97 and related Wisconsin state implementation plan rule under Chapter NR432.

On December 23, 2008, the District of Columbia Circuit Appellate Court issued a decision remanding CAIR to USEPA without vacatur in order to retain the environmental benefits of the program. As a result of this action, the CAIR program was in effect at the time WPL was required to submit its BART analyses to the WDNR. Pursuant to Wis. Admin. Code sec. NR433.05(1)(e), "*If a fossil-fuel fired steam electric plant is subject to the CAIR trading programs under 40 CFR Part 97, the determination of BART shall be made for particulate matter emissions only*." Therefore, WPL's BART analyses for the above-mentioned EGUs were specific to particulate matter (PM) emissions only.

On December 23, 2008 and as allowed under NR433.04(1), WPL requested in writing a 60 day extension to file these BART analyses. The WDNR granted this request on December 23, 2008, extending the deadline to March 6, 2009. WPL submitted its PM BART analyses to the WDNR on March 5, 2009. These submittals are included as Attachment 3.03.

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March 5, 2009

Mr. John Melby Jr. – Director
Bureau of Air Management
Wisconsin Department of Natural Resources
101 South Webster Street
Box 7921
Madison, Wisconsin 53707-7921

RE: Columbia Energy Center Units 1&2 Best Available Retrofit Technology (BART) Determination for Particulate Matter – FID 111003090

Dear Mr. Melby: John

On July 9, 2008, Wisconsin Power and Light Company (WPL) was notified by the Department of Natural Resources (the Department) that Unit 1 and Unit 2 at the Columbia Energy Center in Pardeeville, WI had been determined by the Department to be subject to BART (the "best available retrofit technology" rule). This submittal is provided to fulfill WPL's compliance obligation pursuant to Wisconsin Administrative Code, Chapter NR 433 (Protection of Visibility by Application of Best Available Retrofit Technology) to submit a BART analysis for particulate matter as required under NR433.04 and as further clarified by letters received from the Department dated December 22, 2008[1] and December 23, 2008[2].

This BART assessment filing provides information requested to substantiate the position that the current particulate matter (PM) control technologies on Columbia Units 1&2 meet the definition of BART. BART determinations require an assessment of five factors:

- Cost of compliance
- Energy and non-air quality environmental impacts
- Air pollution control equipment in-use at the source
- The remaining useful life of the sources
- The degree of visibility improvement

As outlined in its December 22, 2008 letter, the Department conducted an analysis of PM reductions at several BART units in the state equipped with high efficiency PM collection devices, either baghouses or electrostatic precipitators (ESPs). The Department assessed the extent of visibility improvement to be gained by reducing currently reported PM emissions from these units. The Department concluded that the visibility improvement

[1] The Department provided guidance on the requirements for an abbreviated PM-related BART submittal.

[2] The Department acknowledged that since electric generating units are subject to the Clean Air Interstate Rule [CAIR], WPL is not required to submit BART engineering analyses for SO_2 and NO_x at this time and extended the deadline for submitting a PM-related BART analysis to 3/06/2009.

resulting from additional reductions in PM emissions from units already operating with high-efficiency PM control devices is not significant, appears to be very high cost relative to the incremental visibility improvement and therefore does not warrant consideration of additional PM controls. Columbia Units 1&2 currently operate high efficiency PM control equipment (ESPs). As such, WPL has determined that the ESPs at Columbia Units 1&2 meet a BART level of control for PM.

To document this determination, the Department requested the following information:

- Description of the type of PM control equipment used, along with the range of collection efficiency expected from the properly operated control equipment
- Installation date of the equipment
- Answer to the question: "Can existing PM control efficiency be improved without modifying the existing equipment configuration?"
- Maintenance procedures for the equipment
- Description of PM related emission monitoring
- Estimate of the remaining useful life of the BART unit

Responses to these data requests are provided in the attached table. If you have further questions or comments please feel free to contact me at (608) 458-4812.

Regards,

Kathy Lipp

Kathy Lipp
Chief Environmental Officer

Attachment: Columbia Units 1&2 Particulate Matter BART Information Table

cc: Larry Bruss - WDNR
Linda Poe - WPL
Jerry Lokenvitz - WPL

Columbia Units 1&2 Particulate Matter BART Determination Data	
Requested Data	**Response**
Description of the type of PM control equipment used, along with the range of collection efficiency expected from the properly operated control equipment	The ESPs on Columbia Units 1&2 were manufactured by Research Cottrell. Unit 1 has a control efficiency of 99.1% and Unit 2 has a control efficiency of 99.5%
Installation date of the equipment	Columbia Unit 1 ESP was installed as original equipment in 1975. Columbia Unit 2 ESP was originally installed in 1978 and converted to a cold-side ESP in 1988.
Can existing PM control efficiency be improved without modifying the existing equipment configuration?	Since primary particulate contributions to visibility impairment at Class 1 areas are insignificant and because both ESPs are operating at above 99% control efficiency, existing ESP operations can not be improved upon in any way that would make significant visibility improvement at Class I areas.
Maintenance procedures for the equipment	Maintenance procedures are outlined in the facility's Malfunction Prevention and Abatement Plan, which is a requirement of the Title V permit program. In addition, compliance assurance monitoring (CAM) plan protocols, recordkeeping and reporting requirements are in the Title V operating permit.
Description of PM related emission monitoring	Columbia Units 1&2 have continuous opacity monitors and have compliance stack test requirements in the Title V permit.
Estimate of the remaining useful life of the BART unit	The existing ESPs in-use on Columbia Units 1&2 are presumed to meet the BART level of control for PM. With this high efficiency control equipment in-use on both units, the Department has concluded that the cost of incremental visibility improvement would appear to be very high as there would be no significant visibility improvement from installing additional PM controls. Therefore, since WPL is not evaluating the cost-effectiveness of any additional PM controls, this question is not applicable.

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March 5, 2009

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101 South Webster Street
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RE: Edgewater Generating Station Unit 4 Best Available Retrofit Technology (BART) Determination for Particulate Matter – FID 460033090

Dear Mr. ~~Melby~~ John:

On July 9, 2008, Wisconsin Power and Light Company (WPL) was notified by the Department of Natural Resources (the Department) that Unit 4 at the Edgewater Generating Station in Sheboygan, WI had been determined by the Department to be subject to BART (the "best available retrofit technology" rule). This submittal is provided to fulfill WPL's compliance obligation pursuant to Wisconsin Administrative Code, Chapter NR 433 (Protection of Visibility by Application of Best Available Retrofit Technology) to submit a BART analysis for particulate matter as required under NR433.04 and as further clarified by letters received from the Department dated December 22, 2008[1] and December 23, 2008[2].

This BART assessment filing provides information requested to substantiate the position that the current particulate matter (PM) control technology on Edgewater Unit 4 meets the definition of BART. BART determinations require an assessment of five factors:

- Cost of compliance
- Energy and non-air quality environmental impacts
- Air pollution control equipment in-use at the source
- The remaining useful life of the sources
- The degree of visibility improvement

As outlined in its December 22, 2008 letter, the Department conducted an analysis of PM reductions at several BART units in the state equipped with high efficiency PM collection devices, either baghouses or electrostatic precipitators (ESPs). The Department assessed the extent of visibility improvement to be gained by reducing currently reported PM emissions from these units. The Department concluded that the visibility improvement

[1] The Department provided guidance on the requirements for an abbreviated PM-related BART submittal.

[2] The Department acknowledged that since electric generating units are subject to the Clean Air Interstate Rule [CAIR], WPL is not required to submit BART engineering analyses for SO_2 and NO_x at this time and extended the deadline for submitting a PM-related BART analysis to 3/06/2009.

resulting from additional reductions in PM emissions from units already operating with high-efficiency PM control devices is not significant, appears to be very high cost relative to the incremental visibility improvement and therefore does not warrant consideration of additional PM controls. Edgewater Unit 4 currently operates a high efficiency PM control device (ESP). As such, WPL has determined that the ESP at Edgewater Unit 4 meets a BART level of control for PM.

To document this determination, the Department requested the following information:

- Description of the type of PM control equipment used, along with the range of collection efficiency expected from the properly operated control equipment
- Installation date of the equipment
- Answer to the question: "Can existing PM control efficiency be improved without modifying the existing equipment configuration?"
- Maintenance procedures for the equipment
- Description of PM related emission monitoring
- Estimate of the remaining useful life of the BART unit

Responses to these data requests are provided in the attached table. If you have further questions or comments please feel free to contact me at (608) 458-4812.

Regards,

Kathy Lipp

Kathy Lipp
Chief Environmental Officer

Attachment: Edgewater Unit 4 Particulate Matter BART Information Table

cc: Larry Bruss - WDNR
Linda Poe - WPL
Pat Hartley - WPL

Edgewater Unit 4 Particulate Matter BART Determination Data	
Requested Data	**Response**
Description of the type of PM control equipment used, along with the range of collection efficiency expected from the properly operated control equipment	The ESP on Edgewater Unit 4 was manufactured by Research Cottrell and has a control efficiency of 94.9%
Installation date of the equipment	Edgewater Unit 4 ESP was installed as original equipment in 1969.
Can existing PM control efficiency be improved without modifying the existing equipment configuration?	Since primary particulate contributions to visibility impairment at Class 1 areas are insignificant and because the ESP operates at above 94% control efficiency, existing ESP operations can not be improved upon in any way that would make significant visibility improvement at Class I areas.
Maintenance procedures for the equipment	Maintenance procedures are outlined in the facility's Malfunction Prevention and Abatement Plan, which is a requirement of the Title V permit program. In addition, compliance assurance monitoring (CAM) plan protocols, recordkeeping and reporting requirements are in the Title V operating permit.
Description of PM related emission monitoring	Edgewater Unit 4 has a continuous opacity monitor and has compliance stack test requirements in the Title V permit.
Estimate of the remaining useful life of the BART unit	The existing ESP in-use on Edgewater Unit 4 is presumed to meet the BART level of control for PM. With this high efficiency control equipment in-use on this unit, the Department has concluded that the cost of incremental visibility improvement would appear to be very high as there would be no significant visibility improvement from installing additional PM controls. Therefore, since WPL is not evaluating the cost-effectiveness of any additional PM controls, this question is not applicable.

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March 5, 2009

Mr. John Melby Jr. – Director
Bureau of Air Management
Wisconsin Department of Natural Resources
101 South Webster Street
Box 7921
Madison, Wisconsin 53707-7921

RE: Nelson Dewey Generating Station Unit 2 Best Available Retrofit Technology (BART) Determination for Particulate Matter – FID 122014530

Dear Mr. ~~Melby~~ John:

On July 9, 2008, Wisconsin Power and Light Company (WPL) was notified by the Department of Natural Resources (the Department) that Unit 2 at the Nelson Dewey Generating Station in Cassville, WI had been determined by the Department to be subject to BART (the "best available retrofit technology" rule). This submittal is provided to fulfill WPL's compliance obligation pursuant to Wisconsin Administrative Code, Chapter NR 433 (Protection of Visibility by Application of Best Available Retrofit Technology) to submit a BART analysis for particulate matter as required under NR433.04 and as further clarified by letters received from the Department dated December 22, 2008[1] and December 23, 2008[2].

This BART assessment filing provides information requested to substantiate the position that the current particulate matter (PM) control technology on Nelson Dewey Unit 2 meets the definition of BART. BART determinations require an assessment of five factors:

- Cost of compliance
- Energy and non-air quality environmental impacts
- Air pollution control equipment in-use at the source
- The remaining useful life of the sources
- The degree of visibility improvement

As outlined in its December 22, 2008 letter, the Department conducted an analysis of PM reductions at several BART units in the state equipped with high efficiency PM collection devices, either baghouses or electrostatic precipitators (ESPs). The Department assessed the extent of visibility improvement to be gained by reducing currently reported PM emissions from these units. The Department concluded that the visibility improvement

[1] The Department provided guidance on the requirements for an abbreviated PM-related BART submittal.

[2] The Department acknowledged that since electric generating units are subject to the Clean Air Interstate Rule [CAIR], WPL is not required to submit BART engineering analyses for SO_2 and NO_x at this time and extended the deadline for submitting a PM-related BART analysis to 3/06/2009.

resulting from additional reductions in PM emissions from units already operating with high-efficiency PM control devices is not significant, appears to be very high cost relative to the incremental visibility improvement and therefore does not warrant consideration of additional PM controls. Nelson Dewey Unit 2 currently operates a high efficiency PM control device (ESP). As such, WPL has determined that the ESP at Nelson Dewey Unit 2 meets a BART level of control for PM.

To document this determination, the Department requested the following information:

- Description of the type of PM control equipment used, along with the range of collection efficiency expected from the properly operated control equipment
- Installation date of the equipment
- Answer to the question: "Can existing PM control efficiency be improved without modifying the existing equipment configuration?"
- Maintenance procedures for the equipment
- Description of PM related emission monitoring
- Estimate of the remaining useful life of the BART unit

Responses to these data requests are provided in the attached table. If you have further questions or comments please feel free to contact me at (608) 458-4812.

Regards,

Kathy Lipp

Kathy Lipp
Chief Environmental Officer

Attachment: Nelson Dewey Unit 2 Particulate Matter BART Information Table

cc: Larry Bruss - WDNR
Linda Poe - WPL
Maria Lauck - WPL

Nelson Dewey Unit 2 Particulate Matter BART Determination Data	
Requested Data	**Response**
Description of the type of PM control equipment used, along with the range of collection efficiency expected from the properly operated control equipment	The ESP on Nelson Dewey Unit 2 was manufactured by Research Cottrell and has a control efficiency of 95.0 - 97.1%
Installation date of the equipment	Nelson Dewey Unit 2 was placed into service in 1962. The ESP was installed in 1974.
Can existing PM control efficiency be improved without modifying the existing equipment configuration?	Since primary particulate contributions to visibility impairment at Class 1 areas are insignificant and because the ESP operates at 95% or above control efficiency, existing ESP operations can not be improved upon in any way that would make significant visibility improvement at Class I areas.
Maintenance procedures for the equipment	Maintenance procedures are outlined in the facility's Malfunction Prevention and Abatement Plan, which is a requirement of the Title V permit program. In addition, compliance assurance monitoring (CAM) plan protocols, recordkeeping and reporting requirements are in the Title V operating permit.
Description of PM related emission monitoring	Nelson Dewey Unit 2 has a continuous opacity monitor and has compliance stack test requirements in the Title V permit.
Estimate of the remaining useful life of the BART unit	The existing ESP in-use on Nelson Dewey Unit 2 is presumed to meet the BART level of control for PM. With this high efficiency control equipment in-use on this unit, the Department has concluded that the cost of incremental visibility improvement would appear to be very high as there would be no significant visibility improvement from installing additional PM controls. Therefore, since WPL is not evaluating the cost-effectiveness of any additional PM controls, this question is not applicable.